



CALIFORNIA STATE SCIENCE FAIR 2011 PROJECT SUMMARY

Name(s) Emily S. Wang	Project Number 31371
Project Title Observing to Understand the Foraging Skills of Captive Giant Pandas	
Abstract Objectives/Goals In order to preserve and protect endangered giant pandas, I observed captive giant pandas at the Chengdu Base of Giant Panda Breeding and Research and looked at their foraging patterns to understand their current strengths and weaknesses. Ultimately, the big idea is to reintroduce the captive-bred giant panda with great survival skills back into the wild. I hypothesize that the pandas should be able to discover all the apples because all the apples were placed in close proximity. Methods/Materials Testing subjects included captive sub-adult giant pandas ages 3-5. In the mornings, before the pandas awakened to eat, I placed sliced apples in designated locations in the enclosure based on specific factors on the Observing Map. These factors included daily route, non-daily route, visibility, and scent. After placing the apples in the enclosure, I signaled the panda keeper to release the panda into the yard. I quietly observed their foraging actions and recorded the apples they ate on the Observing Table. Finally, I cleaned up the leftover apples after the panda returned to its indoor den. Results The two pandas I observed were SiYuan and JingJing. In the summer, SiYuan was able to discover 22/24 apple slices, while JingJing was able to find 16/24. During the winter, SiYuan discovered 13/32 apple slices, while JingJing found 16/32. SiYuan and JingJing both found their first apple within the first 2 minutes. The eaten apples were mostly located on the daily route. The apples that were not found were the ones on: high walls, tree stumps, deep grass, ditches, rocks, and behind structures. Conclusions/Discussion I found that captive giant pandas prefer finding food sources that are within their daily travel patterns, which is hazardous. As pandas live in areas of abundant food, they may be able to stay in this area to save energy and avoid traveling too far. However, if their local food source is depleted, the pandas will be forced to search far, which may be difficult because they are so accustomed to foraging in once food-flourishing areas. Moreover, the panda's olfactory is useful in searching for strong scented foods. Captive pandas are not afraid of tourists passing by their enclosure, which shows their lack of regard for humans as a potential enemy. It is important that our captive giant pandas do not develop reliances on humans.	
Summary Statement I observed captive giant pandas' foraging behaviors and provided scientific data and analysis to prepare the giant pandas for reintroduction into the wild.	
Help Received Dr. Sarah Bexell provided valuable feedback on preliminary design proposals and approved of final project, Experiment conducted under supervision of Mr. Xiang Bo	